



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

646.9710
Job Sheet 165562



Part No: 646.9710

Job Qty: 40 ea

Split

Part Name: Body



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 9/30/17

Job Tracking No:

Due Date: 10/31/17

Created By: Mario Poulin

Type: Stock

Description:

Note: DWG REV D2 SHEETS 2, 3, 4 IPP REV:A NEW ISSUE 12/10/04 JFS VERIFY BY: DD

Ship Via:

Bill of Materials

Part/Part Name	Part Note	Serial No	Quantity	Location
646.9710 Body	DWG REV D2 SHEETS 2, 3, 4 IPP REV:A NEW ISSUE 12/10/04 JFS VERIFY BY: DD		0.000	
M7075T6S1.000X5.000 7075-T6 Sheet1" Thick Plate X 5" Wide			0.000	

Job Routing

Op No	Operation	Qty	Due Date	Standard		Workcenter/Supplier	
				Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time
90	Start up Operation	40 Ea	10/26/17	0.00	0.00	Start up container	FK 17-11-19
100	Bandsaw	40 pcs	10/26/17	0.00	0.18	Bandsaw1	FK 17-11-19
110	CNC Vertical Machining	40 pcs	10/31/17	0.22	48.54	HAAS 1	SBL 17/11/25
120	QC	40 pcs	10/31/17	0.00	0.00	QC2	SBL 17/11/25
130	QC	40 pcs	10/31/17	0.00	0.00	QC8	17/12/14
140	Outsource	20 40 pcs	10/31/17	0.00	0.00	Outsource4	17-12-17
150	Packaging	20 40 pcs	10/31/17	0.00	0.00	Packaging2	17-12-17
155	QC	40 pcs	10/31/17	0.00	0.00	QC5	38 DEC 28 2017
160	SprayPaint	40 pcs	10/31/17	0.00	0.00	Spray Paint	15 1A
165	QC	40 pcs	10/31/17	0.00	0.00	QC14	
180	Packaging	40 pcs	10/31/17	0.00	0.00	Packaging3	CCK 012
190	QC21-SA	40 Ea	10/31/17	0.00	0.00	QC21	JAN 02 2016

Part Op 100 - Cut Blank at 7.425"

Descriptions: 110 - 1-Machine per folio FB130

140 - Issue P/O to ATG : _____ 1- Black Anodize as per Dwg 646.9700

180 - ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***

38553

DEC 04 2017

DAS
13
0-00

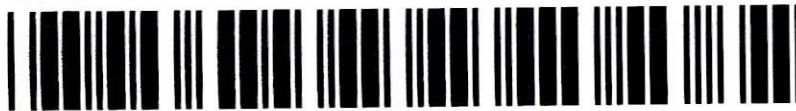
Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	M7075T6S1.000X5.000	25	0	0	0

Part Specifications

Specifications could not be found.

DART
AEROSPACE
S011133



Body

PART NO: 646.9710
Revision:
Operation: Start up Operation
Change No:

Mfg Date: 11/19/17

Job No: 165562

DART
AEROSPACE
S026791



Body

PART NO: 646.9710
Revision:
Operation: Outsource
Change No:

Mfg Date: 12/22/17

Job No: 165562

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Work Order ID 165562

Monday, August 28, 2017 11:40:58 AM

165562

Page 1

Item ID: 646.9710 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Body
Start Date: 9/19/2017 Start Qty: 40.00 ***40*** Cust Item ID:
Required Date: 10/13/2017 Req'd Qty: 40.00 ***40*** Customer:
Reference:

Approvals: Process Plan: DAS 21 Date: AUG 29 2017 Tooling: _____ Date: _____ Run Start ***NR1***
QC: 9-89 Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
646.9700	D2

100		0.00							DAS 44 9-89 17-11-19
100	BAND SAW					40	Ø		
Bandsaw	Memo	0.33							
Jeaspa Bandsaw	Cut Blank at 7.425"								

110		2.29							DAS 44 9-89 17-11-19
110	HAAS CNC VERTICAL MACHINING #1					40	Ø		
HAAS 1	Memo	10.48							
HAAS CNC vertical machine #1	1-Machine per folio FB130 DWG REV: _____ FOLIO REV: _____								
	2- deburr and break all sharp edges								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause			FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date	☐	Manufacturing Process	OTHER : _____							
Misidentified	☐	Past Due								

Work Order ID 165562

Monday, August 28, 2017 11:40:58 AM

165562

Page 2

Item ID: 646.9710

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Body

Start Date: 9/19/2017 Start Qty: 40.00

40

Cust Item ID:

Required Date: 10/13/2017 Req'd Qty: 40.00

40

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC2- Inspect parts off machine FAI/FAIB	0.00							DAS 44 9-89 17-11-19
120 QC Quality Control	Memo	0.40				40	0		
130	QC8- Inspect parts - second check	0.00							DAS 14 9-89 17/12/04
130 QC Quality Control	Memo	0.80				40	0		
140	Outsource process-Anodize per QSI017 4.1.10.1	0.00							
140 Outsource4 Outsource process - Anodize	Memo Issue P/O to ATG : _____ HARD ANODIZE COLOR BLACK, PER IAW MIL-A-8625 TYPE 3 CLASS 2 AS PER MPP-172 SECTION 4.2, Certification of Comformity is required	7,200.00							

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Work Order ID 165562***165562***

Page 3

Monday, August 28, 2017 11:40:58 AM

Item ID: 646.9710

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Body

Start Date: 9/19/2017 Start Qty: 40.00

40

Cust Item ID:

Required Date: 10/13/2017 Req'd Qty: 40.00

40

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.80							
Packaging									
155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.80							
Quality Control									
160		0.00							
160									
SprayPaint	Memo	0.00							
Spray Painting	-PRIME CARDINAL 7760-4702 LOW VOC EPOXY PRIMER (LIGHT GRAY)								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					

Work Order ID 165562

Monday, August 28, 2017 11:40:58 AM

165562

Page 4

Item ID: 646.9710

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Body

Start Date: 9/19/2017 Start Qty: 40.00

40

Cust Item ID:

Required Date: 10/13/2017 Req'd Qty: 40.00

40

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

165

QC14- Inspect Spray Paint

0.00

165

QC

Memo

0.00

Quality Control

180

Identify as per dwg & Stock Location: _____

0.00

180

Packaging

Memo

0.40

Packaging

IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

4.00

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Page 1

Monday, August 28, 2017 11:41:01 AM

Work Order ID: 165562

165562

Parent Item: 646.9710

646 9710

Parent Item Name: Body

Start Date: 9/19/2017

Required Date: 10/13/2017

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP REV:A NEW ISSUE 12/10/04 JFS VERIFY BY: DD IPP Rev.B
17.06.14 Primer to be done in house DP Verify DD IPP Rev.C 17.06.27
Change Mat. as per ECN17-574 DP verify DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M7075T6S1.000X5.000

Purchased

No

100

f

11.5310

0.62

26.10526

M7075T6S1 000X5 000

FK 17-11-19

7075-T6 Sheet1" Thick Plate x 5" Wide

Location

Loc Qty

Loc Code

MAT005

11.531

m137781

7.747

m138086-186

3.784

4.2

FM138451

—————>

21.33

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

DART AEROSPACE LTD	Work Order:	165562
Description: Body	Part Number:	646.9710
Inspection Dwg: 646.9700 Rev: D2		Page 1 of 2

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.13 x 45°	+/-0.010 x 0.5°	.13 x 45°	/		Vern	FK-11
1.500	+/-0.005	1.501	/		"	"
0.352	+0.005/-0.000	.352	/		"	"
0.10 x 45°	+/-0.010 x 0.5°	.10 x 45°	/		"	"
0.875	+/-0.005	.877	/		"	"
0.700	+/-0.005	.700	/		"	"
5.500	+/-0.005	5.500	/		"	"
0.660	+/-0.005	.660	/		"	"
0.660	+/-0.005	.660	/		"	"
0.278	+/-0.002	.278	/		HG	31006
0.339	+/-0.002	.339	/		"	"
0.352	+/-0.002	.352	/		"	"
0.372	+/-0.002	.372	/		"	"
1.067	+/-0.002	1.067	/		"	"
2.608	+/-0.002	2.608	/		"	"
2.750	+/-0.002	2.750	/		"	"
2.892	+/-0.002	2.892	/		"	"
3.348	+/-0.002	3.348	/		"	"
3.597	+/-0.002	3.597	/		"	"
3.847	+/-0.002	3.847	/		"	"
0.351	+/-0.002	.351	/		"	"
0.544	+/-0.002	.544	/		"	"
2.195	+/-0.002	2.195	/		"	"
2.304	+/-0.002	2.304	/		"	"
2.451	+/-0.002	2.451	/		"	"
2.639	+/-0.002	2.639	/		"	"
3.395	+/-0.002	3.395	/		"	"
3.495	+/-0.002	3.495	/		"	"
4.551	+/-0.002	4.551	/		"	"
4.595	+/-0.002	4.595	/		"	"
4.687	+/-0.002	4.687	/		"	"
4.734	+/-0.002	4.734	/		"	"
6.651	+/-0.002	6.651	/		"	"
Ø0.201	+0.005/-0.001	.201	/		Vern	FK-11



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO.

05360

SHEET 1 OF 1

DWG NO. 646.9700

REV: D

PREPARED BY J. BECKER

DATE: 03/24/16

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY: ENGR

MFG

QC

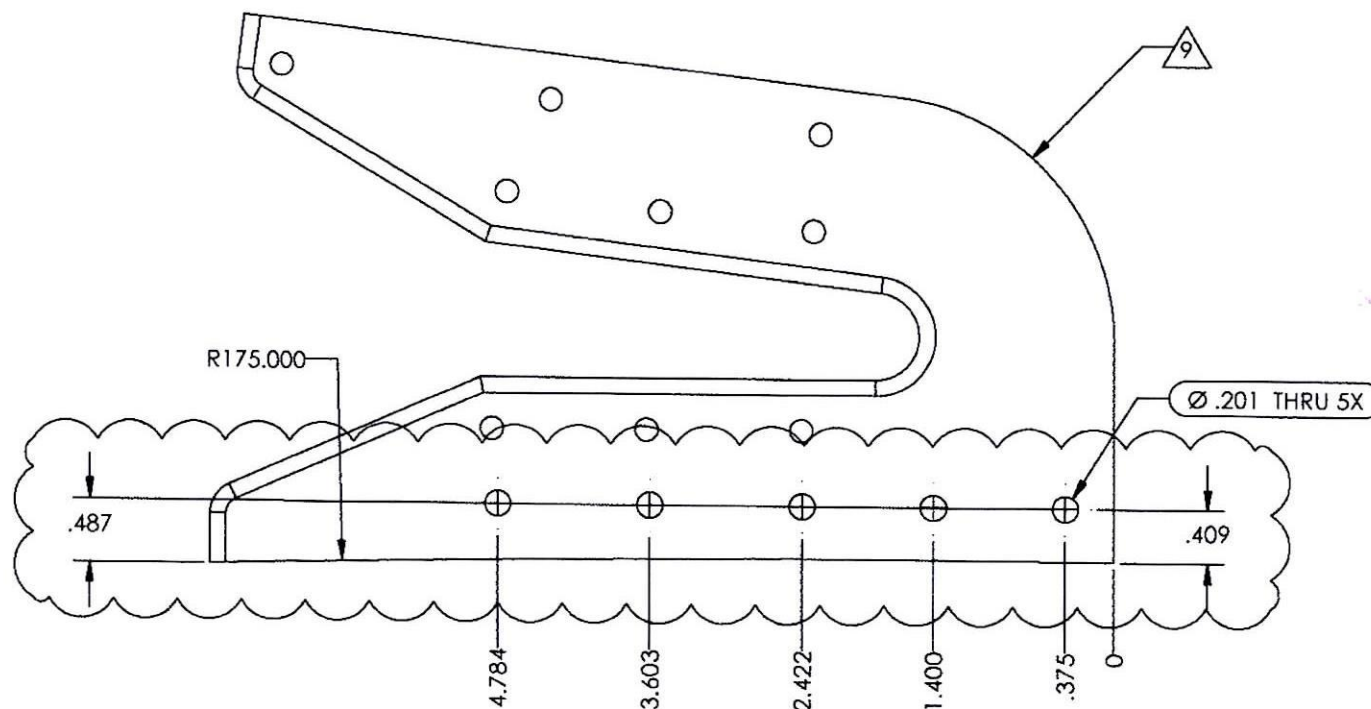
EFF. CURRENT ORDER

REASON: REVISED DIMENSIONS

ECR: N/A

ACTION ITEM:
1.

SHEET 7, ZONE C3 IS:



SHOP
RETURN
ENGINEERING
CONTROL
JECT TO
WITH
WORK

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
WITHOUT NOTICE
WORK ORDER
NO. 165762 MWS
170829

PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

☐ YES ☒ NO

DART
AEROSPACEAPICAL INDUSTRIES, INC.
dba DART AEROSPACETRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO.

05345

SHEET 1 OF 1

DWG NO. 646.9700

REV: D

PREPARED
BY

J. GARDINER

DATE: 03/15/16

EFFECT ON DWG

☐ INC. ☒ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY:

ENGR.

MFG

QC

EFF.

CURRENT ORDER

REASON: REVISED NOTES

ECR:

N/A

ACTION ITEM:

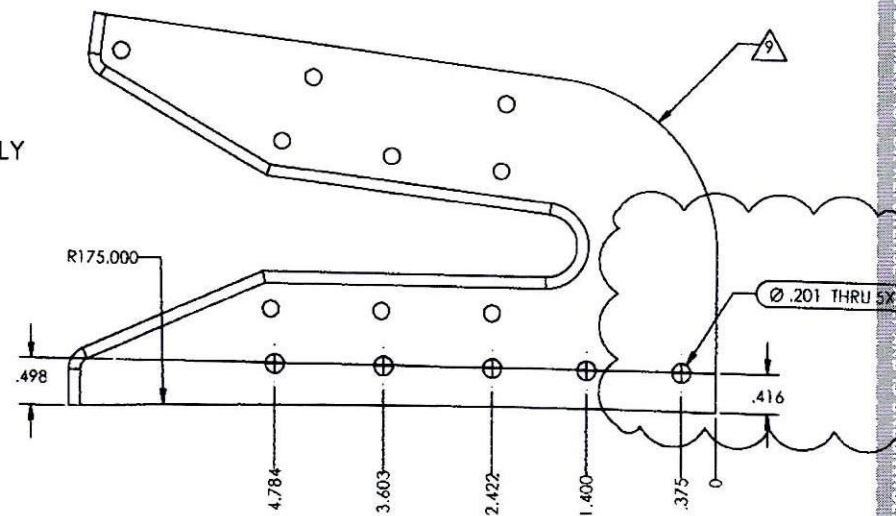
1.

SHEET 1, ZONE A6 IS:

NOTES:

IS

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172 SECTION 2.1, 3.3 & 4.3.
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MPP-172 SECTION 3.3; 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.

SHEET 7, ZONE C5 IS:

DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

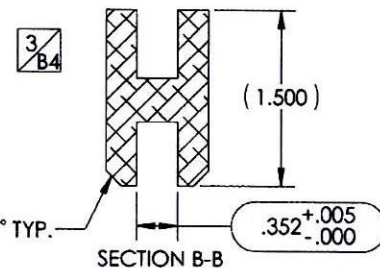
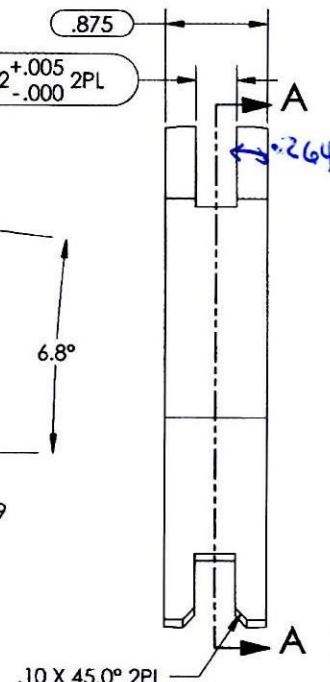
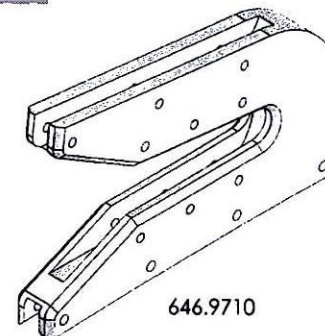
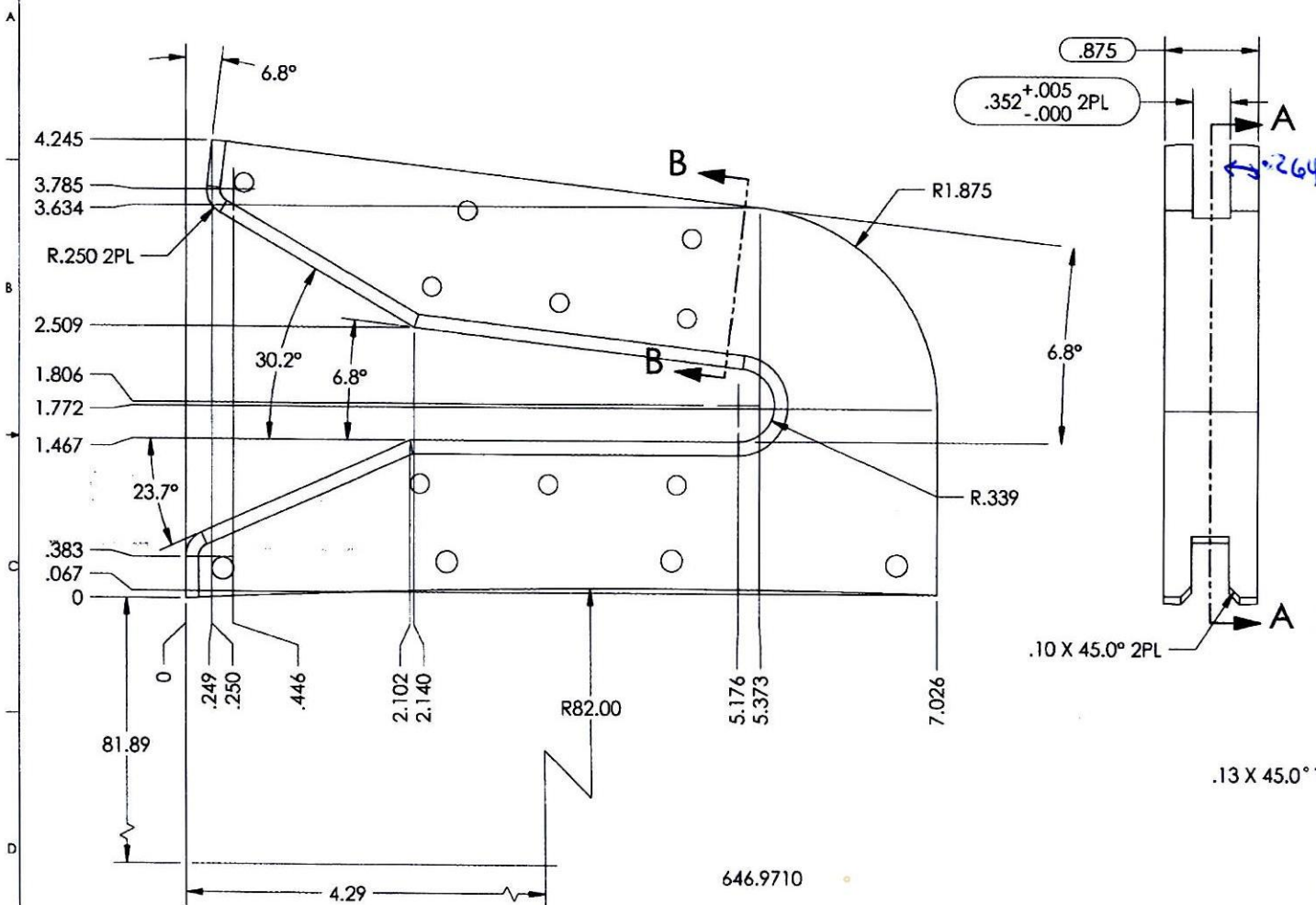
DER REVIEW REQUIRED

☐ YES ☒ NO

1
2
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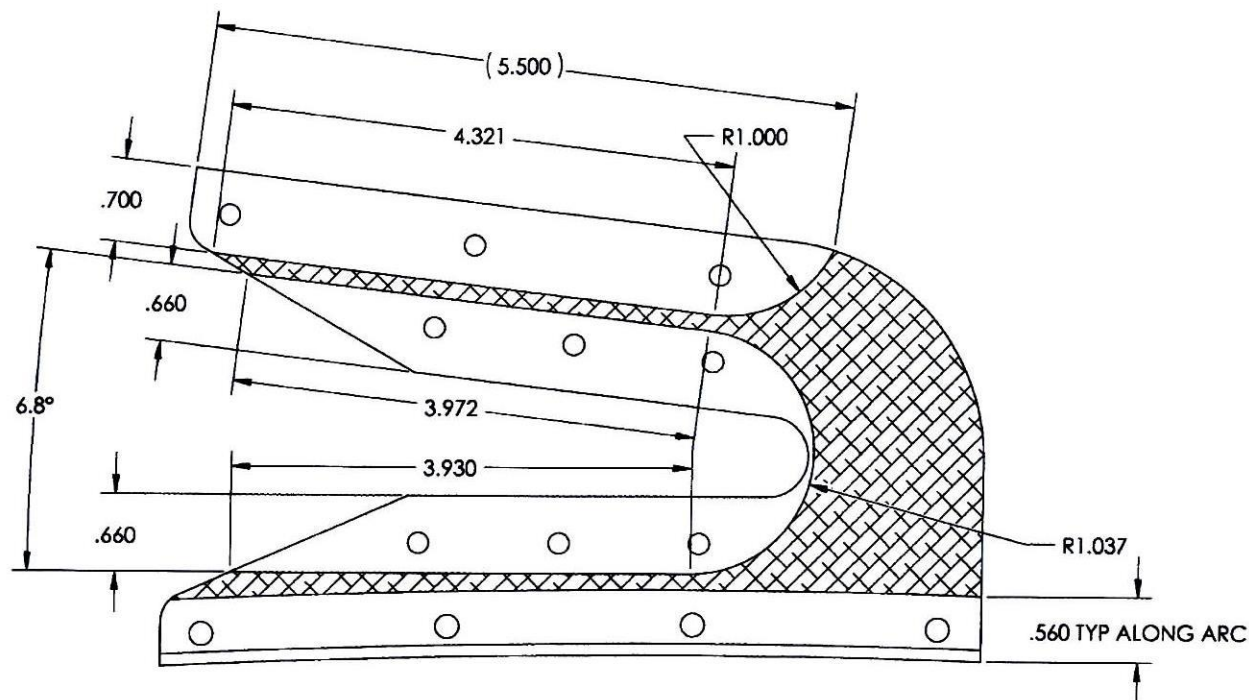


ORIGINAL DATE 05/20/09	DART AEROSPACE 3030 ENTERPRISE CT. SUITE A VISTA, CA 92081 (760) 724-5300	
DRAWN BY F. ROSANO	CHECKED P. BRAVO	APICAL INDUSTRIES INC. DBA DART AEROSPACE
DESIGNED BY F. BRAVO	APPROVED BY F. BRAVO	CUTTER SUB ASSEMBLY
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		
SHEET B	CAGE CODE 07M26	QTY 646.9700
SCALE NONE		SHEET 2 OF 7

1
2
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SECTION A-A $\frac{2}{C6}$

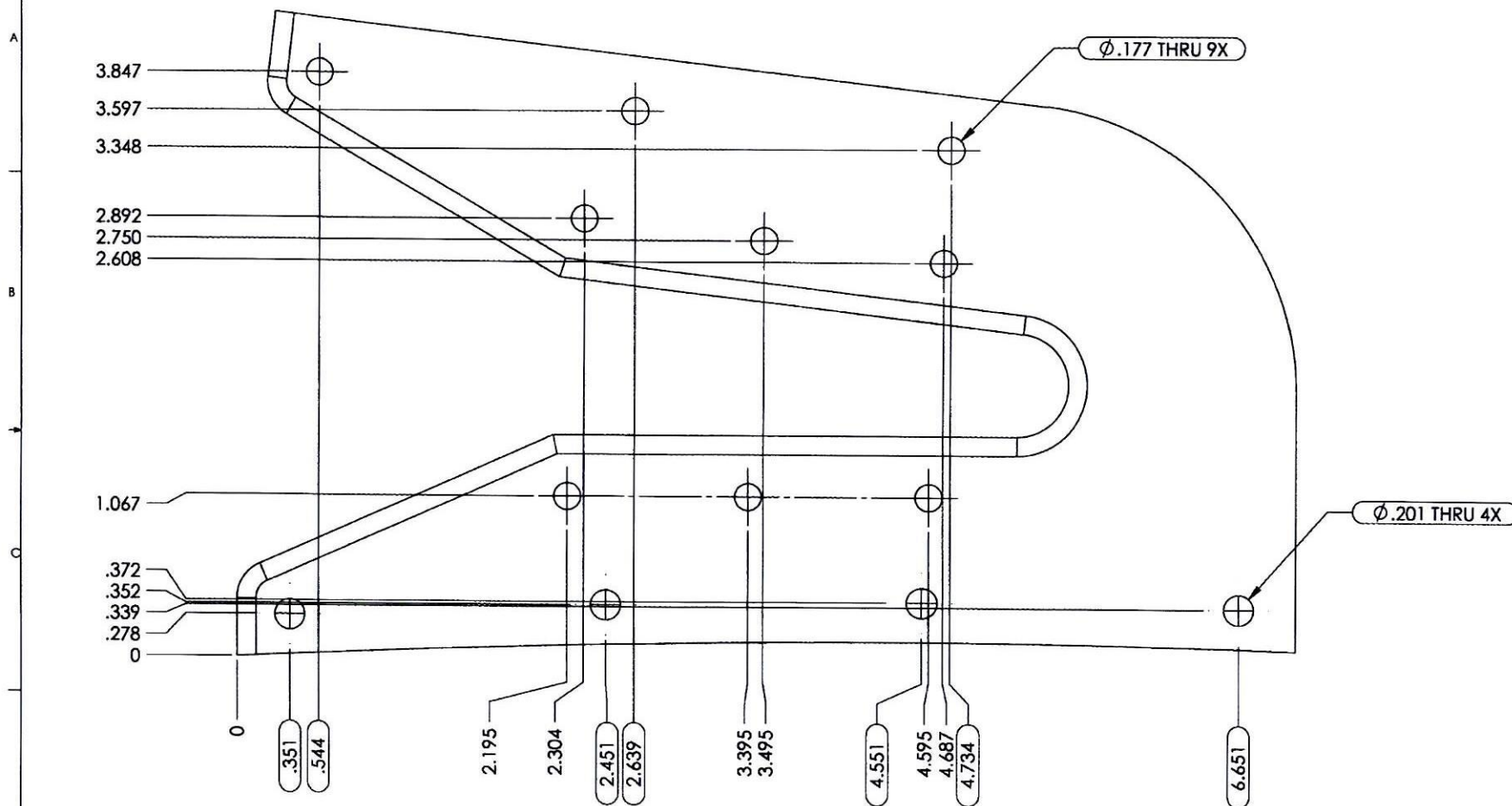
646.9710

ORIGINAL DATE (DD-MN-YY) 25-7-09	DART 3030 ENTERPRISE CT., AEROSPACE SUITE A VISTA, CA. 92081 APICAL INDUSTRIES, INC. DBA DART AEROSPACE (760) 724-5300		
DRAWN BY E. ROSANO	CHECKED P. BEATO	DRAWING APPROVAL J. BILLYO DESIGN CONFIDENTIAL NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ±.01 2 PLACE DECIMALS ±.005 ANGLES ±.5°		SEE CAGE CODE 8 07M26	DWG. NO. 646.9700
SCALE NONE		REV D	SHEET 3 OF 7

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HOLE LOCATIONS +/- .002

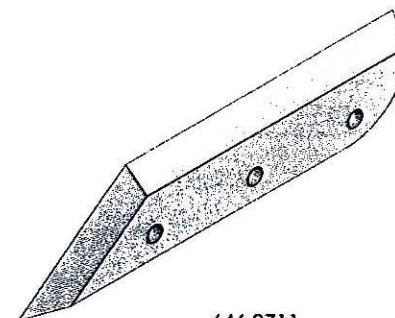
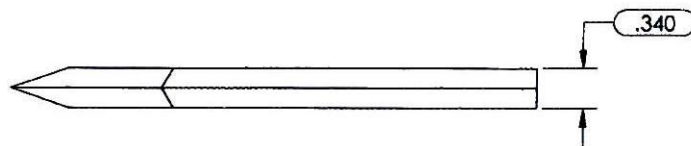
646.9710

ORIGINAL DATE		REV. NO.	
MODIFIED BY		P. ROSANO	
DRAWN BY		P. ROSANO	
CHECKED BY		P. ROSANO	
DRAWING APPROVAL		P. ROSANO	
CONTRACT NO.		646.9700	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°			
DART AEROSPACE		3030 ENTERPRISE CT., SUITE A, VISTA, CA. 92081 (760)-724-5300	
CUTTER SUB ASSEMBLY			
REV. B	CAGE CODE 07M26	DWG. NO. 646.9700	REV. D
SCALE NONE		SHEET 4 OF 7	

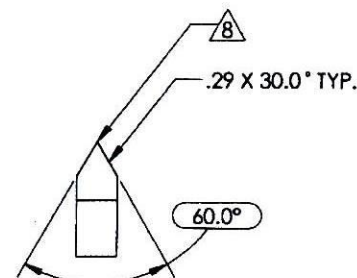
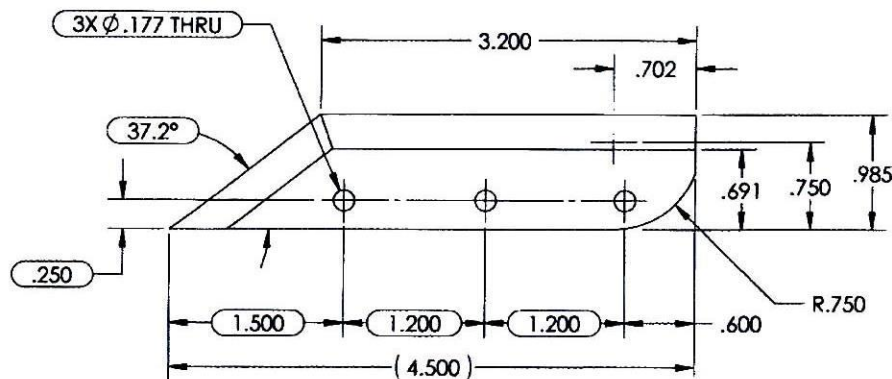
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646.9711



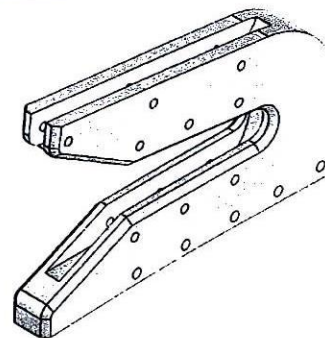
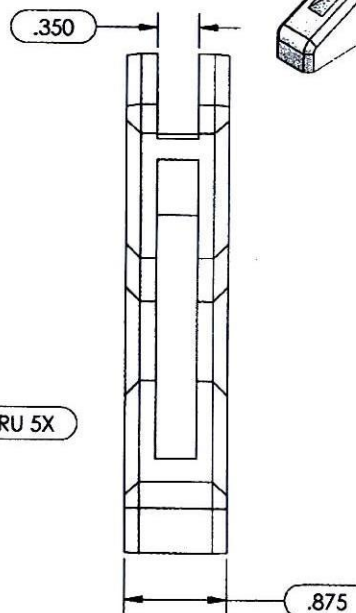
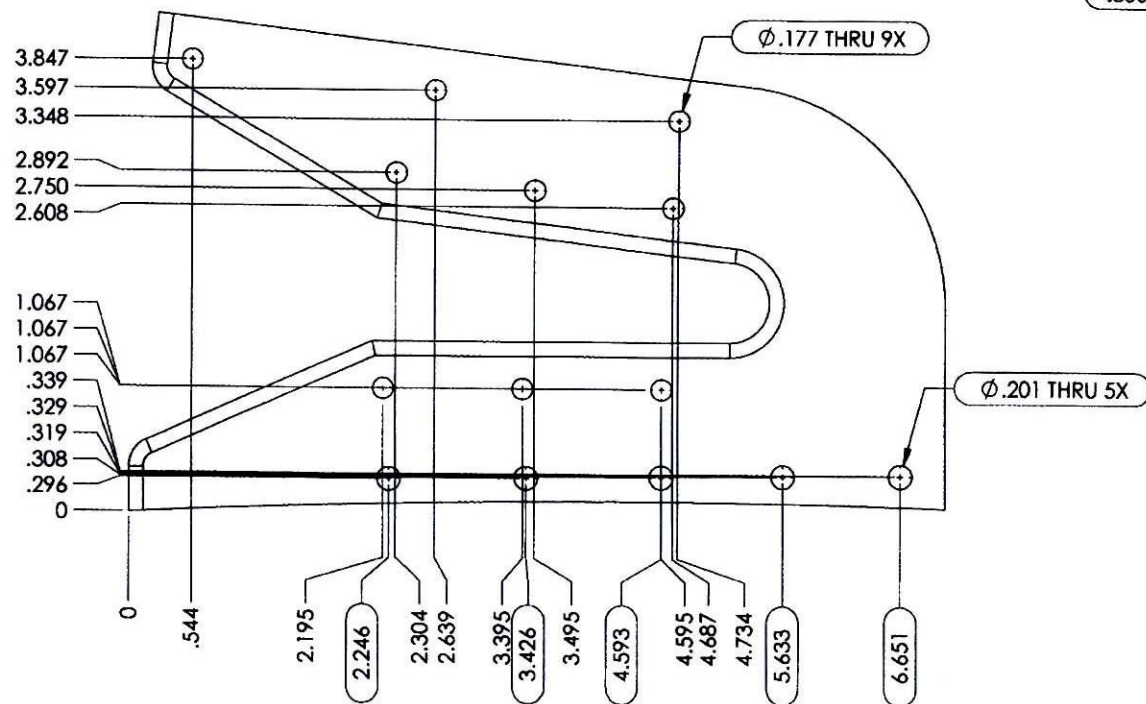
646.9711

ORIGINAL DATE	6-27-09	DART 3030 ENTERPRISE CT. SUITE A	
DESIGNED BY	CHUCKER	VISTA, CA, 92081	
DRAWN BY	P. BRAYO	(760)-724-5300	
ENGINEER APPROVAL		APICAL INDUSTRIES INC DBA DART AEROSPACE	
DATE OF CONSTRUCTION		CUTTER SUB ASSEMBLY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SHEET 8 CAGE CODE 07M26 DWG. NO. 646.9700	REV. D SCALE NONE SHEET 5 OF 7

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646.9712 9

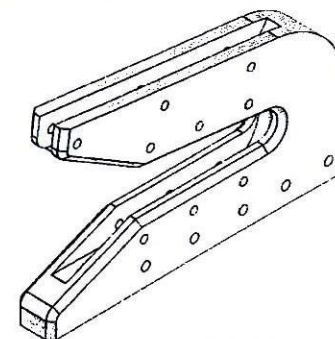
646.9712

ORIGINAL DATE: 05-20-09		3030 ENTERPRISE CT., SUITE A	
DRAWN BY: R. ROSANO		VISTA, CA 92081	
CHECKED BY: P. BRAVO		(760) 724-5300	
DRAWING APPROVAL: P. BRAVO		APICAL INDUSTRIES INC. dda DART AEROSPACE	
CONTRACT NO.		CUTTER SUB ASSEMBLY	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.			
TOLERANCES ARE:			
FRACTIONS: DECIMALS: ±.01			
ANGLES: ± 5°			
SHEET: 8	CAGE CODE: 07M26	DWG. NO.: 646.9700	REV: D
SCALE: NONE		SHEET: 6 OF 7	

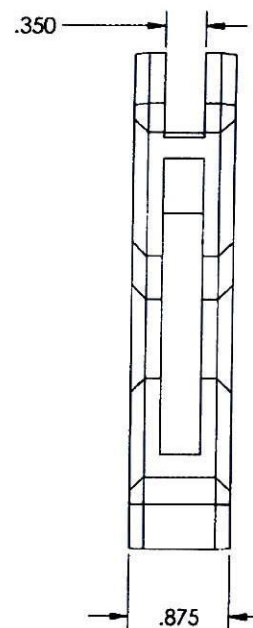
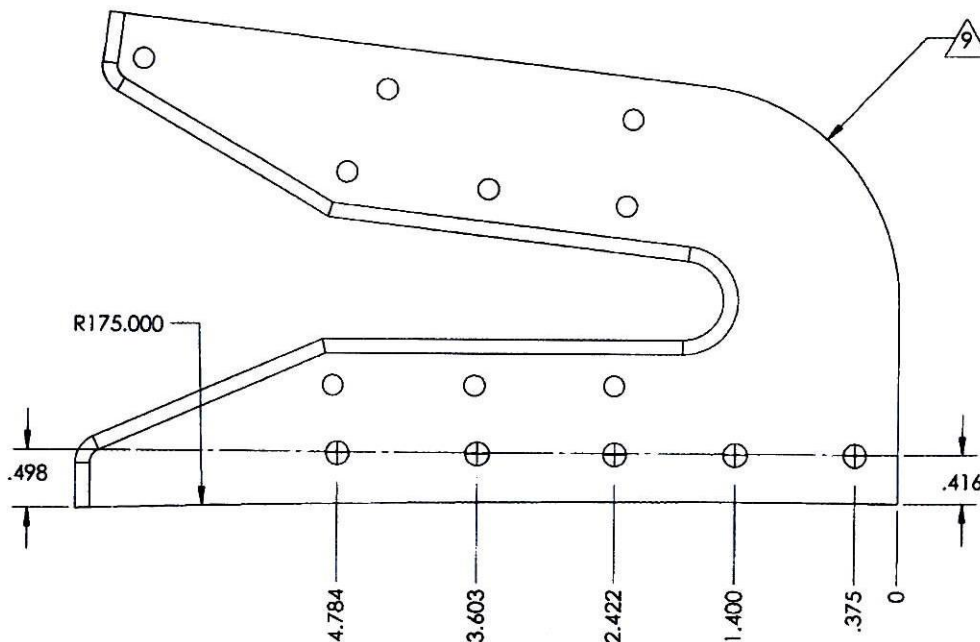
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES DBA DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES DBA DART AEROSPACE IS PROHIBITED.

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646.9713



ORIGINAL DATE: 05-20-09		DART AEROSPACE 3030 ENTERPRISE CT. SUITE A VISTA, CA 92081 (760)-724-5300	
DRAWN BY: P. ROSAND	CHECKED: P. BRAYC	APICAL INDUSTRIES INC. DBA DART AEROSPACE	
DRAWING APPROVAL: P. BRAYC		CUTTER SUB ASSEMBLY	
CONTRACT NO:		REV: B	REV: D
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES: 1:5		SCALE: NONE	SHEET: 7 OF 7



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

646.9710

Job Sheet 165562-A



Part No: 646.9710

Job Qty: 20 ea

Part Name: Body



Part Weight: 0 lbs

Status: Scheduled

Priority: High

Job Created: 12/18/17

Job Tracking No:

Due Date: 10/31/17

Created By: Michelle Gagnon-Donovan

Type: SOLD

Description:

Note: DWG REV D2 SHEETS 2, 3, 4 IPP REV:A NEW ISSUE 12/10/04 JFS VERIFY BY: DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
130	QC	20 pcs		10/30/17	0.00	0.00	QC8 Machining-1		
140	Outsource	20 pcs		10/30/17			ATG001-VC	10	
150	Packaging	20 pcs		10/30/17	0.00	0.00	Packaging2		
155	QC	20 pcs		10/30/17	0.00	0.00	QC5		
160	SprayPaint	20 pcs		10/31/17	0.00	3.33	Spray Paint		
165	QC	20 pcs		10/31/17	0.00	0.00	QC14		
180	Packaging	20 pcs		10/31/17	0.00	0.00	Packaging3-1		
190	QC21-SA	20 Ea		10/31/17	0.00	0.00	QC21		

Part Op 140 - Issue P/O to ATG : 038553 1- Black Anodize as per Dwg 646.9700
Descriptions: 180 - ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***

Job Allocations

Job Allocations could not be found.

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Body	0.130Inches ± 0.010	0.140 0.120		
2	Body	45.0Angle ± 0.5	45.5 44.5		
3	Body	1.500Inches ± 0.005	1.505 1.495		
4	Body	0.352Inches + 0.005 - 0.000	0.357 0.352		
5	Body	0.100Inches ± 0.010	0.110 0.090		
6	Body	45.0Angle ± 0.5	45.5 44.5		
7	Body	0.875Inches ± 0.005	0.880 0.870		
8	Body	0.700Inches ± 0.005	0.705 0.695		
9	Body	5.500Inches ± 0.005	5.505 5.495		

10	Body	0.660Inches $\pm$ 0.005	0.665 0.655
11	Body	0.660Inches $\pm$ 0.005	0.665 0.655
12	Body	0.278Inches $\pm$ 0.002	0.280 0.276
13	Body	0.339Inches $\pm$ 0.002	0.341 0.337
14	Body	0.352Inches $\pm$ 0.002	0.354 0.350
15	Body	0.372Inches $\pm$ 0.002	0.374 0.370
16	Body	1.067Inches $\pm$ 0.002	1.069 1.065
17	Body	2.608Inches $\pm$ 0.002	2.610 2.606
18	Body	2.750Inches $\pm$ 0.002	2.752 2.748
19	Body	2.892Inches $\pm$ 0.002	2.894 2.890
20	Body	3.348Inches $\pm$ 0.002	3.350 3.346
21	Body	3.597Inches $\pm$ 0.002	3.599 3.595
22	Body	3.847Inches $\pm$ 0.002	3.849 3.845
23	Body	0.351Inches $\pm$ 0.002	0.353 0.349
24	Body	0.544Inches $\pm$ 0.002	0.546 0.542
25	Body	2.195Inches $\pm$ 0.002	2.197 2.193
26	Body	2.304Inches $\pm$ 0.002	2.306 2.302
27	Body	2.451Inches $\pm$ 0.002	2.453 2.449
28	Body	2.639Inches $\pm$ 0.002	2.641 2.637
29	Body	3.395Inches $\pm$ 0.002	3.397 3.393
30	Body	3.495Inches $\pm$ 0.002	3.497 3.493
31	Body	4.551Inches $\pm$ 0.002	4.553 4.549
32	Body	4.595Inches $\pm$ 0.002	4.597 4.593
33	Body	4.687Inches $\pm$ 0.002	4.689 4.685
34	Body	4.734Inches $\pm$ 0.002	4.736 4.732
35	Body	6.651Inches $\pm$ 0.002	6.653 6.649
36	Body	0.201Inches $\pm$ 0.005 - 0.001	0.206 0.200
37	Body	0.177Inches $\pm$ 0.005 - 0.001	0.182 0.176
38	Body	7.026Inches $\pm$ 0.005	7.031 7.021
39	Body	4.245Inches $\pm$ 0.005	4.250 4.240

Plex 12/18/17 8:16 AM Dart.Gagnon.Michelle



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

PO038553

Supplier: ATG001-VC
A.T.G. Industries Inc
731 INDUSTRIELLE ROAD
ROCKLAND
ON
K4K 1T2 Canada
Phone: 613-446-4544
Fax: 613-446-4556

Attention: Lalande, Marc-Andre

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: PO038553

PO Date: 12/4/17

Due Date: 12/11/17

**Purchase Order
Revision:**

Revision Date:

Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

Items											
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price	
1	169053	RBT18650-101-1	Drain Tool : URF17-660 -Issue P/O to ATG : PO -ANODIZE COLOR RED, PER IAW MIL-A-8625 TYPE-2 CLASS-2 WATER SEAL -Certificate of Conformity is required	Firmed	12/11/17	1 pcs	0 pcs	1 pcs	\$16.00/pcs	\$16.00	
Line Item Note part RUSH											
2	168550	RBD29905-1	Side Plate -Issue P/O to ATG : PO -ANODIZE COLOR RED, PER IAW MIL-A-8625 TYPE-2 CLASS-2, Water sealant -Certificate of Conformity is required	Firmed	12/11/17	4 pcs	0 pcs	4 pcs	\$16.00/pcs	\$64.00	
3	168575	RBD29905-3	Cord Handle -Issue P/O to ATG : PO -ANODIZE COLOR RED, PER IAW MIL-A-8625 TYPE-2 CLASS-2, Water sealant -Certificate of Conformity is required	Firmed	12/11/17	1 pcs	0 pcs	1 pcs	\$16.00/pcs	\$16.00	

PURCHASE ORDER

Items										
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
4	168574	RBD29905-15	Center Plate -Issue P/O to ATG : PO -ANODIZE COLOR RED, PER IAW MIL-A-8625 TYPE-2 CLASS-2, Water sealant -Certificate of Conformity is required	Firmed	12/11/17	5 pcs	0 pcs	5 pcs	\$16.00/pcs	\$80.00
5	167512	D5355-041	Aft Clamp Assembly Issue P/O to ATG : Black Anodize as per Dwg D5355 Certification of Comformity is required.	Firmed	12/11/17	4 pcs	0 pcs	4 pcs	\$5.61/pcs	\$22.44
6	166975	D4977-1	Bracket, LH Issue P/O to ATG : Hard Black Anodize, PRIME AS PER dwg D4977	Firmed	12/11/17	2 pcs	0 pcs	2 pcs	\$10.90/pcs	\$21.80
7	168020	646.3310	LH Half - Upper Cutter Assembly Issue P/O to ATG : Hard Black Anodize/prime as per Dwg 646.3300	Firmed	12/11/17	7 pcs	0 pcs	7 pcs	\$20.45/pcs	\$143.15
8	168226	646.3310	LH Half - Upper Cutter Assembly Issue P/O to ATG : Hard Black Anodize/prime as per Dwg 646.3300	Firmed	12/11/17	4 pcs	0 pcs	4 pcs	\$20.45/pcs	\$81.80
9	169137	646.3310	LH Half - Upper Cutter Assembly Issue P/O to ATG : Hard Black Anodize/prime as per Dwg 646.3300	Firmed	12/11/17	1 pcs	0 pcs	1 pcs	\$20.45/pcs	\$20.45
10	165562	646.9710	Body Issue P/O to ATG : Hard Black Anodize/prime as per Dwg 646.9700	Firmed	12/11/17	40 pcs	0 pcs	40 pcs	\$16.85/pcs	\$674.00
11	165646	646.9810	Deflector Issue P/O to ATG : Hard Black Anodize/prime as per Dwg 646.9800	Firmed	12/11/17	4 pcs	0 pcs	4 pcs	\$49.60/pcs	\$198.40
Grand Total:										\$1,338.04

Order Notes



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 914344

Date: 20-Dec-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
		OUR TRUCK	
Quantity	Description		
	Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.		
20 ea	Part: 646.9710 Body Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0001-.0002" (1 - 2 mils) per drawing. Job: 22105	Rev: D	PO: PO038553 Line: 10
4 ea	Part: 646.9810 Deflector Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils). Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0001-.0002" (1 - 2 mils) per drawing. Job: 22106	Rev: A	PO: PO038553 Line: 11 ✓
8 ea	Part: 646.3311 RH Half Upper Cutter Assembly Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 22119	Rev: NC	PO: PO038553 Line: 13
CERTIFICATE OF CONFORMANCE A.T.G Industries Inc. certifies that all items in this shipment conform to the requirements. Date: <u>20/12/2017</u> Certified Signature: <u>[Signature]</u> Receiver Signature: _____ A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited. Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of Made in Canada.			



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200

Inventory

Operation Number	Operation	Serial Number	Job	Quantity	Weight	Original Serial Number	Location	Container	Status	Added	Special Comments	Label	Supplier	Change No
Part Number: 646.9710 Revision: Body														
190	QC21-SA	S026791	165562	20 Ea	0		CCK012	Bin	Stock	12/22/2017	*			
Operation Totals:		1		20	0									
Part Totals:		1		20	0									
Part Number: M7075T6S1.000X5.000 Revision: 7075-T6 Sheet1" Thick Plate X 5" Wide														
100	Receive Ft	M138086-186	165562	0 ft	0		Start Up Machining		Stock	10/24/2017	*			
Operation Totals:		1		0	0									
Part Totals:		1		0	0									
Totals:		2		20	0									

Plex 1/8/2018 8:57 AM Dart.Boucher.Sylvie

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due	☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter	☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes	☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center	☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence
OTHER : _____					